SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS
OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, & 30

1. REQUISITION NUMBER	PAGE	OF
See Schedule	1	7

2. CONTRACT NO.	3. AWARD/ EFFECTIVE DATE	4. ORDER NUMBER	5. SOLICITATION NUMBER	6. SOLICITATION ISSUE DATE
EP-W-11-011		0050	RFO#0050	

7. FOR SOLICITATION INFORMATION CALL:	a. NAME	b. TELEPHONE NUMBER (No collect calls)	8. OFFER DUE DATE/LOCAL TIME
	Jennifer Kuhn	202-564-0844	

9. ISSUED BY — CODE HPOD

HPOD
US Environmental Protection Agency
Headquarters Procurement Operations
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington DC 20460

10. THIS ACQUISITION IS ☒ UNRESTRICTED OR ☐ SET ASIDE: % FOR:

☐ SMALL BUSINESS
☐ HUBZONE SMALL BUSINESS
☐ SERVICE-DISABLED VETERAN-OWNED SMALL BUSINESS
☐ WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOMEN-OWNED SMALL BUSINESS PROGRAM
☐ EDWOSB
☐ 8(A)

NAICS: 541611
SIZE STANDARD: $14.0

11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED	12. DISCOUNT TERMS	13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)	13b. RATING / 14. METHOD OF SOLICITATION
☐ SEE SCHEDULE		☐	☐RFQ ☐IFB ☐RFP

15. DELIVER TO — CODE

Allen Brookes
USEPA National Health and Environme
Research Lab/ORD Western Ecology Di
200 S.W. 35th Street
brookes.allen@epa.gov
Corvallis OR 97333-4902

16. ADMINISTERED BY — CODE HPOD

HPOD
US Environmental Protection Agency
Headquarters Procurement Operations
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington DC 20460

17a. CONTRACTOR/ OFFEROR — CODE (b)(4) — FACILITY CODE

CH2M HILL, INC.
Attn: (b)(4)
9191 S. JAMAICA ST.
ENGLEWOOD CO 801125946

TELEPHONE NO. (b)(4)

☐ 17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER

18a. PAYMENT WILL BE MADE BY — CODE RTP FMC

RTP Finance Center
US Environmental Protection Agency
RTP-Finance Center (AA216-01)
109 TW Alexander Drive
www2.epa.gov/financial/contracts
Durham NC 27711

☐ 18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK BELOW IS CHECKED ☐ SEE ADDENDUM

19. ITEM NO.	20. SCHEDULE OF SUPPLIES/SERVICES	21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
	DUNS Number: (b)(4) TOCOR: Allen Brookes Max Expire Date: 01/26/2016 Delivery: 01/26/2016 Period of Performance: 05/13/2015 to 01/26/2016				
0001	Technical assistance to produce a Health Impact Assessment (HIA) plug-in module for one (1) or more open planning tools in accordance with the attached statement of work and the contractor's approved work plan and cost estimate dated March 26, 2015. *(Use Reverse and/or Attach Additional Sheets as Necessary)*				255,464.36

25. ACCOUNTING AND APPROPRIATION DATA: See schedule

26. TOTAL AWARD AMOUNT *(For Govt. Use Only)*: $255,464.36

☐ 27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4. FAR 52.212-3 AND 52.212-5 ARE ATTACHED. ADDENDA ☐ ARE ☐ ARE NOT ATTACHED.
☐ 27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4. FAR 52.212-5 IS ATTACHED. ADDENDA ☐ ARE ☐ ARE NOT ATTACHED.

☐ 28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN _____ COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED.

☒ 29. AWARD OF CONTRACT: REF. Proposal OFFER DATED 03/26/2015. YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS: 0001

(b)(4)

(b)(4)

30c. DATE SIGNED: 5/14/2015

31a. UNITED STATES OF AMERICA *(SIGNATURE OF CONTRACTING OFFICER)*: ELECTRONIC SIGNATURE

31b. NAME OF CONTRACTING OFFICER *(Type or print)*: Jennifer Kuhn

31c. DATE SIGNED: 05/13/2015

AUTHORIZED FOR LOCAL REPRODUCTION
PREVIOUS EDITION IS NOT USABLE

STANDARD FORM 1449 (REV. 2/2012)
Prescribed by GSA - FAR (48 CFR) 53.212

19. ITEM NO.	20. SCHEDULE OF SUPPLIES/SERVICES	21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
	Cost Ceiling: (b)(4) Fixed Fee Ceiling: (b)(4) Total CPFF Ceiling: $255,464.36 Requisition No: PR-ORD-15-00520, PR-ORD-15-01407 Accounting Info: 14-15-C-26XM000-301FK8XPW-2532-26A6A-1526XME035-00 1 BFY: 14 EFY: 15 Fund: C Budget Org: 26XM000 Program (PRC): 301FK8XPW Budget (BOC): 2532 Cost: 26A6A DCN - Line ID: 1526XME035-001 Funding Flag: Partial Funded: $190,497.44 Accounting Info: 15-16-C-26XM000-301FK8XPW-2532-26A6A-1526XME077-00 1 BFY: 15 EFY: 16 Fund: C Budget Org: 26XM000 Program (PRC): 301FK8XPW Budget (BOC): 2532 Cost: 26A6A DCN - Line ID: 1526XME077-001 Funding Flag: Partial Funded: $64,966.92 The obligated amount of award: $255,464.36. The total for this award is shown in box 26.				

32a. QUANTITY IN COLUMN 21 HAS BEEN

☐ RECEIVED ☐ INSPECTED ☐ ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED: _____

32b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE	32c. DATE	32d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE

32e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE	32f. TELEPHONE NUMBER OF AUTHORIZED GOVERNMENT REPRESENTATIVE 32g. E-MAIL OF AUTHORIZED GOVERNMENT REPRESENTATIVE

33. SHIP NUMBER ☐ PARTIAL ☐ FINAL	34. VOUCHER NUMBER	35. AMOUNT VERIFIED CORRECT FOR	36. PAYMENT ☐ COMPLETE ☐ PARTIAL ☐ FINAL	37. CHECK NUMBER

38. S/R ACCOUNT NUMBER	39. S/R VOUCHER NUMBER	40. PAID BY

41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT		42a. RECEIVED BY *(Print)*	
41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER	41c. DATE	42b. RECEIVED AT *(Location)*	
		42c. DATE REC'D *(YY/MM/DD)*	42d. TOTAL CONTAINERS

Statement of Work
Contract Number: EP-W-11-009/EP-W-11-010/EP-W-11-011
RFO Number: 0050

I. TITLE: Create Health Impact Assessment (HIA) Plug-in For Open Planning Tools

II. PERIOD OF PERFORMANCE:

From: Date of Award
To: 1/26/2016

III. BACKGROUND:

As part of the Sustainable and Healthy Communities Research Program, EPA has a project to study and develop tools that will help communities make decisions that support more sustainable development patterns. One component of this project will produce tools to fill identified gaps in community needs. Not all tools identified are appropriate for the EPA to produce so we will only produce tools that are appropriate to EPA goals and expertise. This project addresses filling gaps in the suite of available community planning tools for making sustainability decisions. While planning tools help communities to visualize change and evaluate potential consequences, one identified gap is the ability to evaluate the effects of change in the built environment on local public health.

IV. PURPOSE AND OBJECTIVE:

The purpose of this task order is to produce a health plug-in module for one (1) or more open planning tools. Plug-in functionality enhances tool capability. Many open planning tools are currently in use and more are in development. Many are based on geographic information systems (GIS) standards and may even run on top of more general-purpose GIS software such as ArcGIS. Examples include: CommunityViz, Envision Tomorrow Plus, Index, and Urban Footprint. A plug-in designed for one (1) of these platforms may run only on that platform, but similarities among platforms may allow for a significant amount of code reuse.

Data Sources

The estimation by a planning tool module of health effects from changes to the urban environment must be supported by multiple studies. EPA will provide the contractor with in-house meta-analyses and literature reviews for developing scientifically defensible model coefficients for quantitative or semi-quantitative estimates. The contractor will be given all meta-analyses that have been completed at time of contract award. Searching for or developing additional meta-analyses may also be required.

Several publicly available spatial data sets are relevant to this project, including EPA's Smart Growth Database, and the percent impervious and forest rasters from the National Land Cover Database. For selected US communities, EPA's EnviroAtlas public web tool provides urban design metrics including percent tree cover, percent near-road tree cover, distance to parks, and window views of green space from homes, schools, and day-care centers. The contractor shall propose and justify the data sets to be used to produce this plug-in.

National vs. Regional Predictions

The goal of this project is to produce a nationally relevant tool. Given that data are not available for every part of the country, results must be generalizable to apply where no data exist. The health module should use the best data where available, yet produce results wherever it is used. The module should include measures of uncertainty to communicate the state of scientific understanding about the links between selected metrics of health and the built environment.

V. QUALITY ASSURANCE (QA) REQUIREMENTS:

Check [X] Yes if the following is required or [ ] NO if the following is not required. The Contractor shall submit with their technical proposal a written Quality Assurance Project Plan for any project that is developing environmental measurements or a Quality Assurance Supplement to the Quality Management Plan for any project which generates environmental data using models.

VI. TASKS AND DELIVERABLES:

The TOPO will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the TOPO's comments. Contractor shall provide the TOPO with copies of all deliverables as requested in the Task Order.

Contractor personnel shall at all times identify themselves as Contractor employees and shall not present themselves as EPA employees. Furthermore, they shall not represent the views of the U.S. Government, EPA, or its employees. In addition, the Contractor shall not engage in inherently governmental activities, including but not limited to actual determination of EPA policy and preparation of documents on EPA letterhead.

Task 1: Develop Research Approach and Maintenance Plan (II.A.1 (b), page 1-10)

Research Approach

Aspects of the built environment affect many health issues including asthma and other respiratory ailments from breathing polluted air, obesity and heart ailments from inactivity due to lack of walkability within urban areas, and mental issues such as

depression from disconnection with nature. Given data that show built environment correlations between these and other health issues, health impacts from urban design changes may be estimated with some level of certainty. This information can be presented to the planner and affected community so that they may evaluate the desirability of the proposed changes. The set of health issues covered in the plug-in will be determined by the importance of urban design to these issues, the strength of evidence from the published literature, the availability of data for the estimations, and time constraints. The contractor shall propose and justify the set of health issues to be used in the plug-in.

The contractor shall propose a methodology for predicting health outcomes from changes to the municipal or exurban environment that would be modeled by open planning tools such as Urban Footprint and CommunityViz. The selection of these outcomes shall be based on strength of evidence from the literature, potential health issues including asthma exacerbation, body weight, cardiovascular fitness, and elder longevity. The methodology should include the types and sources of the data necessary for making the proposed health estimates. Since data will not be uniformly available across the country, the proposal should include methods for dealing with both sparse and rich data sets, and how to express uncertainty in the results.

The contractor shall prepare an internal EPA report describing the methodology, data, and process for maintenance and enhancement of the plug-in over time.

Because spatial projections of human health are carefully scrutinized, the contractor shall base projections on as many published sources as possible, along with a meta-analysis of the data showing how consistent the data are between studies.

Propose Maintenance Methodology

To keep this tool relevant we must be able to add new data as it becomes available, both to strengthen the estimates of selected health outcomes and to add new outcomes when possible. The health module must be adaptable to new open planning tools if demand arises.

The contractor shall provide an internal EPA report documenting the application program interface (API) of the module to facilitate integrating the module with other open planning tools. This report should also describe the process of integrating the module with open planning tools. The document should also describe the processes of preparing data for insertion into the module, both for the existing health outcomes and to add new health outcomes.

Task 2: Propose Scope (II.A.1 (b), page 1-10)

The contractor shall prepare an internal EPA report outlining the scope of the project as well as providing levels of effort and cost associated with elements within scope.

The scope of the project includes the set of open planning tools for which the health module will be made available, which building and landscape features will provide input to the module, and which health outcomes will be predicted by the module. In addition, the scope includes the types of data that will be needed to produce needed models, as well as the range of data that might be used to allow the plug-in to be used nationally both in communities that are data rich and those that are not so data rich. The statement of scope goes beyond what is necessary for a work plan. It constitutes research into what will be the best tool to extend existing tool technologies that provide for health outcomes in particular locations to a tool that can be used nationally.

Task 3: Develop Health Module (II.A.1 (b), page 1-10)
The goal of this task is to create a set of core functionalities that all versions of the plug-in will have in common. The form will likely be a shared library with an API for accessing each piece of functionality.

The plug-in will estimate selected health outcomes based on associations with built infrastructure that have appeared in the published literature. The objective of the plug-in is to help communities judge the potential health effects of urban design changes under evaluation. The plug-in will estimate potential health effects on the local population from changes to the built environment that are assessed within the host planning tool.

The contractor shall implement the design proposed and accepted by the TOPO in Tasks 1 and 2. The contractor shall provide suitable test code for determining accuracy of the code.

The contractor shall keep all code and data used in the project in the EPA's GitHub repository to allow ready access by EPA project members.

Task 4: Develop Plug-in (II.A.1 (b), page 1-10)

In this task the contractor will use the general module produced in Task 3 to create plug-in functionality for open planning tools. The contractor shall create code wrappers to adapt the health module to be used in the agreed upon set of open planning tools.

For each of the agreed upon open planning tools the contractor shall produce a plug-in to the tool that provides the functionality of the health module to that tool, including the ability to provide any needed inputs, and to display any outputs in ways useful to and consistent with the open planning tool in which they are operating.

Task 5: Documentation and Users Guide (II.A.1 (b), page 1-10)

The contractor shall provide complete documentation for how the user will set up and run the plug-in referring them to documentation for the host planning tool as necessary. Documentation will include instruction on the types of data necessary, any calibration or parameterization necessary, how the plug-in will be installed and/or activated within the

host planning tool, how to run the plug-in, and how to access and interpret results provided by the plug-in.

The contractor and the TOPO shall determine the appropriate form of final documentation. That is, should documentation consist of one (1) or more documents, should documentation be delivered as PDF or web pages, etc.

SCHEDULE FOR DELIVERABLES:

The contractor shall provide the following specific deliverables to the EPA TOPO:

	DELIVERABLE	FORM AND QUANTITY	SCHEDULE
Task 1:	1) Internal EPA report describing methodology. 2) Internal EPA report describing maintenance methodology.	Microsoft Work document	3 months after contract award
Task 2:	Internal EPA report on scope.	Microsoft Word document	5 months after contract award
Task 3:	1) Source code for health module 2) All test code developed for health module. 3) Data used in development and execution of health module 4) Design documents and code documentation produced in developing code and data	Form to be agreed upon with contractor	Final version at project completion.
Task 4:	Source code for plug in wrappers.	Form to be agreed upon with contractor	Final version at project completion
Task 5:	Documentation in agreed upon form to be delivered at completion of project, drafts to be delivered alongside versions of plug-in.	Form to be agreed upon with contractor	Final version at project completion.